of the antigen, and/or in which the linker is of different composition. For MB3.6, this specification may be met by one CDR of the heavy chain to maintain antigen binding because of the small size of the ganglioside antigen.

7. Molecules of claim 1-6 which has been modified in DNA or protein sequence but which retains the specificity and action of these molecules.

8. The use of molecules of claims 1-7 expressed in T cells or NK cells or other effector cells to treat patients with cancers expressing the GD3 (MB3.6 derivatives) or PSMA antigen (3D8, 4D4, 3E11 derivatives).

9. The combination use of molecules of claims 1-7 expressed in T cells or NK cells or other effector cells to treat patients with cancers expressing the GD3 (MB3.6 derivatives) or PSMA antigen (3D8, 4D4, 3E11 derivatives), together with each other or with heterologous constructs to engage additional stimulatory and functional properties of the effector cells to enhance the antitumor therapeutic efficacy.

Abstract of the Disclosure

This invention relates to specific antibodies against ganglioside GD3 called MB3.6 and against protein prostate specific membrane antigen (PSMA) called 3D8, 4D4 and 3E11 when prepared as chimeric molecules with signaling molecules of T cells and other effector cells, and the use thereof in the treatment of cancers expressing these antigens.